General practitioners' knowledge of post-traumatic stress disorder: a controlled study

Calum G Munro, Chris P Freeman and Roslyn Law

SUMMARY

Background: *Post-traumatic stress disorder (PTSD) is common, is associated with substantial morbidity, and is often not recognised in primary care.*

Aim: *To explore whether general practitioners (GPs) have significant gaps in their knowledge of PTSD.*

Design of study: *A controlled study.*

Setting: *Primary care in two Scottish regions.*

Method: *A validated postal questionnaire consisting of clinical vignettes for PTSD, acute stress reaction, and depression was used to gather the data. The primary outcome measures were the proportion describing 'best practice' management of PTSD and the comparison of this with the control condition, the proportion describing 'best practice' management of depression. The secondary outcome measures were comparisons of PTSD and depression by recognition, drug treatment, and referral.*

Results: *Two-thirds (67.5%) of GPs included PTSD in their differential diagnosis for the PTSD vignette, and 86.8% made a referral to secondary care for the PTSD case. A minority of GPs (42.9%) and only 54.1% of a comparison group of psychiatrists specified the drug treatment of choice for PTSD, a selective serotonin reuptake inhibitor. Only 28.3% of GPs had the knowledge to recognise PTSD and prescribe appropriately, compared with 89.8% for depression (*P*<0.001). Only 10.2% of GPs described best practice for PTSD, compared with 47.7% for depression (*P*<0.001).*

Conclusion: *Lack of knowledge is among the reasons for less than ideal recognition and management of PTSD in primary care. Further research should aim to explore the implementation of PTSD guidelines in primary care.*

Keywords: *knowledge; practice guidelines; primary health care; post-traumatic stress disorders.*

C G Munro, MRCPsych, specialist registrar in psychotherapy, Maudsley Hospital, London. C P Freeman, FRCPsych, consultant psychiatrist and psychotherapist; R Law, DClinPsych, clinical psychologist, Rivers/Cullen Centre, Royal Edinburgh Hospital, Edinburgh.

Address for correspondence

Dr Calum Munro, Outpatient Psychotherapy Department, Maudsley Hospital, Denmark Hill, London SE5 8AZ.
E-mail: Calum.Munro@slam.nhs.uk

Submitted: 16 September 2003; Editor's response: 30 September 2003; final acceptance: 24 May 2004

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Introduction

POST-TRAUMATIC stress disorder (PTSD) is common, with prevalence rates of between 1.3 and 3.9% reported from nationally representative samples in Australia and the United States, respectively.[1,2] Over three-quarters of PTSD sufferers endure at least one other psychiatric diagnosis in their lifetime, usually secondary to the diagnosis of PTSD.[1] PTSD has been shown to have a direct negative impact on physical health.[3,4] Higher lifetime prevalences of circulatory, respiratory, and musculoskeletal conditions have been described among PTSD patients.[5] Quality of life is markedly compromised. PTSD has been shown to have the largest negative impact on social, emotional, and physical functioning of all the anxiety disorders.[6] However, there is clear evidence for the efficacy of both drug and psychological treatments for PTSD.[7-9]

PTSD sufferers have increased rates of attendance at primary care services.[4,10,11] This is reflected in primary care prevalence rates of between 9 and 12%, which are significantly higher than the rates in the general population.[12,13] There has long been evidence that emotional disorders are poorly recognised in general medical settings.[14] Lack of recognition inevitably results in lack of treatment. Fewer than 30% of primary care attenders with an anxiety or depressive disorder in the United Kingdom (UK) household survey received treatment.[15] A number of recent studies have found that recognition of PTSD or trauma-related symptoms is a particular problem.[12,16-18] A recent Israeli study found that as few as 2.4% of PTSD cases were identified by a general practitioner (GP).[12]

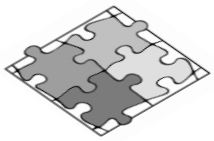
In this study we examined GPs' knowledge of PTSD in relation to their knowledge of depression and an ideal of 'best practice'. Greater knowledge of depression than PTSD among GPs is to be expected. Best practice knowledge among all GPs is not a realistic expectation. Our aim, therefore, was to explore the extent of the gaps in GPs' knowledge of PTSD.

Method

Sample and setting

We conducted a postal survey of all GPs, and of psychiatrists working in general adult psychiatry, in two Scottish regions. This provided a representative sample of 946 GPs and a comparison group of 76 psychiatrists. The only exclusion criterion was involvement in the pre-pilot or pilot process. Forty-six GPs were not available for a variety of reasons, and hence we included 976 GPs and psychiatrists in the study. Female GPs accounted for 48.8% of the GP sample.

HOW THIS FITS IN



What do we know?

Post-traumatic stress disorder (PTSD) is common in primary care, with reported prevalence rates of between 9 and 12%. One study has reported that as few as 2% of PTSD cases are recognised in primary care.

What does this paper add?

There are significant gaps in general practitioners' knowledge of PTSD. Knowledge of appropriate prescribing is an area of particular concern.

Data collection

As no postal questionnaire exists to assess GPs' knowledge regarding the diagnosis and management of PTSD, we constructed and validated a vignette-based instrument. Four vignettes were constructed, each reflecting a primary care presentation and fulfilling ICD-10 diagnostic criteria for moderate depressive episode (Vignette 1), acute stress reaction (Vignette 2), PTSD (Vignette 3), and adjustment disorder (Vignette 4) (Supplementary Appendix 1). The validity of the diagnostic content of the PTSD and the acute stress reaction cases were independently assessed by 10 PTSD specialists, with their responses showing 100% concordance. We used an identical structure and coding system for the depression and PTSD vignettes. The inclusion of the depression vignette therefore provided a control condition to assess any differences in the theoretical knowledge of each disorder.

We considered two factors that may affect knowledge of PTSD and hence the ability to diagnose and manage it appropriately. We hypothesised that those attending university since 1984 were more likely to have been exposed to formal teaching on PTSD and that GPs practising in an area with a specialist PTSD service were more likely to gain knowledge of PTSD. We also considered whether the adequacy of psychological services for referral may influence management of PTSD. We gathered the appropriate information to test these hypotheses, including information on waiting times for non-urgent mental health services and GPs' perceptions of how waiting times affect their clinical practice.

The postal questionnaire was sent to the entire sample in early December 2001 followed by a brief reminder letter to non-responders 3 weeks later. A further questionnaire accompanied by a cover letter from local opinion leaders and a non-responder's feedback form was sent after 6 weeks. Cover letters identified the research as 'mental health in primary care' and did not identify PTSD as the main area of interest. This allowed for blind assessment of knowledge.

Coding and analysis

Coding strategies were derived from evidence-based clinical guidelines, resulting in best practice coding frameworks for the management of PTSD and depression.[19,20] The data was analysed with the help of SPSS software, using descriptive statistics to explore frequencies. χ^2 tests were used to compare independent proportions, with Fisher's exact test where appropriate. McNemar tests were used to compare paired proportions. All tests are two-tailed, with *P*-values <0.05 considered statistically significant.

Results

Response

In total, 433/900 (48.1%) GPs and 37/76 (48.7%) psychiatrists returned questionnaires, with 211 (21.6%) non-completers giving reasons for their non-completion. The main reasons for non-completion were 'too busy' (80.1%) and 'sick of questionnaires' (53.1%). Female GPs accounted for 49.3% of the GP responders, showing no significant sex difference among responders compared with the original sample. Similarly, there were no significant differences in response rates by region.

Diagnosis

Two hundred and ninety-one (67.5%) GPs included PTSD in their differential diagnosis for the PTSD vignette (Vignette 3), but 39.1% (168) misdiagnosed the acute stress reaction vignette (Vignette 2) as PTSD. In comparison, 94.4% (408) of GPs included depression in their differential diagnosis for the depression vignette (Vignette 1). This was significantly more than the 67.5% (difference = 27.2%, 95% confidence interval [CI] = 23 to 32, $P<0.001$) who recognised the diagnosis of PTSD for Vignette 3. Less than 20% (75) of GPs demonstrated their knowledge of the temporal component of PTSD by recognising that an initial presentation of acute stress reaction (Vignette 2), progressed to a diagnosis of PTSD with persistence of symptoms for over a month.

Prescribing

GPs' prescribing responses for the PTSD vignette (Vignette 3) are described in Tables 1 and 2. Nearly half (42.9%) of the GPs recorded an appropriate drug for Vignette 3 (PTSD), but far fewer did so with a diagnosis of PTSD in mind and within an appropriate timescale of 2 months (Table 2). As 94.7% of the GPs recorded an appropriate drug treatment for the depression vignette, this was significantly better than the 42.9% describing appropriate prescribing for the PTSD vignette (difference = 51.8%, 95% CI

Table 1. Medication prescribed by general practitioners for PTSD Vignette 3.[a]

Medication	%[b] (*n*)
SSRI specified	42.9 (185)
'Antidepressant'	25.3 (109)
None prescribed	14.4 (62)
Short-term sedative	12.8 (55)
Medium-term sedative	5.1 (22)
Tricyclic antidepressant	7.7 (33)
β-blockers	4.4 (19)

[a]*n* = 431 (2 missing).[b]Percentages do not add up to 100 as more than one drug may have been prescribed. PTSD = post-traumatic stress disorder. SSRI = selective serotonin reuptake inhibitor.

Table 2. General practitioner recognition and prescribing for PTSD and depression.

	Correct differential diagnosis % (*n*)	Prescribed appropriate drug % (*n*)	Correct differential diagnosis plus prescribed appropriate drug % (*n*)	Correct differential appropriate diagnosis plus prescribed appropriate drug plus within 2 months % (*n*)
PTSD, Vignette 3[a]	67.5 (291)	42.9 (185)	28.3 (122)	21.6 (93)
Depression, Vignette 1[b]	94.4 (408)	94.7 (409)	89.8 (388)	86.6 (374)

[a]*n* = 431 (2 missing). [b]*n* = 432 (1 missing). PTSD = Post-traumatic stress disorder.

= 48.1 to 58.2, $P<0.001$ [Table 2]). The most common prescriptions for the acute stress reaction vignette (Vignette 2) were for a sedative (39.4%) and for a β-blocker (20.6%).

Referrals

The vast majority of GPs (86.8%) described a psychiatric or psychological referral for the PTSD vignette (Vignette 3). Almost half of the GPs (46.2%) described an appropriate referral to specific psychological services for this vignette, although only 26.9% included PTSD in their differential diagnosis and made an appropriate referral within 4 months of the initial presentation (Table 3). However, there was no significant difference between the proportion of GPs making an appropriate referral for Vignette 1 (depression) and for Vignette 3 (Table 3).

Psychiatrists comparison group

Psychiatrists were more likely than the GPs to include PTSD in their differential diagnosis for Vignette 3 (89.2 versus 67.5%, difference = 21.7%, 95% CI = 12 to 54.3, P =0.01) and less likely to misdiagnose the acute stress reaction vignette (Vignette 2) as PTSD (16.2 versus 39.1%, difference = 22.9%, 95% CI = 7.6 to 37.1, P = 0.01). However, psychiatrists were not significantly more likely to record an appropriate drug treatment (54.1 versus 42.9%).

Best practice

Our best practice criteria for the management of PTSD and depression in primary care are derived from evidence-based guidelines.[19,20] For PTSD, best practice involves:

- including PTSD in the differential diagnosis;
- prescribing a selective serotonin reuptake inhibitor (SSRI) within 2 months of initial presentation;
- making a referral for cognitive behavioural therapy or eye movement desensitisation and reprocessing, or to a clinical psychologist, or to a specialist service, within 4 months of presentation if there is no improvement with initial management.

For depression, best practice involves:

- including depression in the initial differential diagnosis;
- prescribing an antidepressant within 2 months of initial presentation;
- making a referral for cognitive behavioural therapy or interpersonal therapy, or to a clinical psychologist, or to a psychiatrist (after two unsuccessful trials of medication), within 4 months of presentation if there is no improvement with initial management.

Only 10.2% (44) of the GPs described best practice for the PTSD case presented in Vignette 3. This is in contrast to the 47.7% (206) of GPs who described best practice for the depression case presented in Vignette 1 (difference = 37.5%, 95% CI = 33.3 to 43.7, P <0.001). Even if we optimistically assume that those who recorded a non-specific prescription of 'antidepressant' intended using an SSRI within an appropriate timescale, the proportion achieving best practice for PTSD only rises to 16.7%.

Differences between GP groups

There were three results of note according to sex, date of medical qualification, and region of practice. There was weak evidence that female GPs were more likely to achieve best practice management for PTSD (13.2 versus 7.4%, difference = 5.8%, 95% CI = 0.06 to 11.5, P = 0.045) There was also a trend of more best practice among the Lothian GPs, but as the numbers achieving best practice were small, the confidence interval is wide and the result non-significant (12.1 versus 5.9%, difference = 6.2%, 95% CI = –5.3 to 11.6, P = 0.048). Similarly, there was a trend of more best practice among GPs who had graduated since 1984 compared with those who graduated before 1974, but the number of responders in the older group was small and therefore the trend did not reach statistical significance (13.9 versus 5.9%, difference = 8%, 95% CI = –15.3 to 16.6, P = 0.059).

Table 3. General practitioner recognition and referrals for PTSD and depression.

	Correct differential diagnosis % (*n*)	Appropriate referral % (*n*)	Correct differential diagnosis plus appropriate referral % (*n*)	Correct differential diagnosis plus appropriate referral plus within 4 months % (*n*)
PTSD, Vignette 3[a]	67.5 (291)	46.2 (199)	34.3 (148)	26.9 (116)
Depression, Vignette 1[b]	94.4 (408)	52.3 (226)	50.2 (217)	49.5 (214)

[a]*n* = 431 (2 missing). [b]*n* = 432 (1 missing). PTSD = Post-traumatic stress disorder.

Access to secondary care

Despite encouraging our sample to respond to the questionnaire as if in an 'ideal world' situation, with all services readily available, we felt it was important to assess their perceptions of the clinical realities, as we felt this was likely to have a bearing on their responses.

A total of 79.3% (330/416) of GPs described waits for a clinical psychology service of over 6 months, with 22.6% (94/416) waiting over a year. It was therefore no surprise that 86.4% (342/396) of GPs felt that waiting times hindered their clinical practice, the majority (244) stating that they avoided referring to a clinical psychologist.

Discussion

Summary of main findings

The vignette we used as a representation of PTSD included a clear, exceptionally threatening traumatic event along with vivid re-experiencing, hyperarousal, avoidance, and withdrawal. Encouragingly, 67% of GPs included PTSD in their differential diagnosis, suggesting a general awareness of the disorder, although this vignette portrayed a 'textbook' presentation, which is often not the case in clinical practice. Acute stress reaction was misdiagnosed as PTSD by 39% of GPs. The acute stress reaction vignette presented hyperarousal and re-experiencing 2 days after a serious road traffic accident, which is essentially a normal reaction in the short term. We therefore found some difficulties in recognising PTSD and trauma-related symptoms in primary care, consistent with the findings of Taubman-Ben-Ari *et al*,[12] Stein *et al*,[13] and others.[16-18]

Of more concern was the finding that only 43% of GPs and 54% of psychiatrists specified an SSRI, the drug treatment of choice, for the case of PTSD. The results also suggest that some of the GP prescribing was not specifically for PTSD, as only 28.3% of those who included PTSD in their differential diagnosis also described the use of an SSRI for treatment. This suggests either a lack of confidence in the diagnosis of PTSD or a lack of knowledge of the appropriate drug treatment, and contrasts with the equivalent figure of 89.8% for the depression vignette (Table 2).

We purposely derived our best practice criteria liberally from more stringent evidence-based guidelines and adopted an inclusive approach to coding to reduce the risk of false negatives. Using the same methods of enquiry and coding for depression and PTSD we found an impressive 48% describing best practice for depression, but a significantly lower rate of 10% for PTSD.

Our key findings therefore show a general awareness of the disorder yet substantial gaps in GPs' specific knowledge of diagnosis and prescribing for PTSD. This suggests that a disorder prevalent in primary care populations may often go unrecognised and a simple efficacious drug treatment may go unprescribed.

Service factors are also clearly important in this context. We were well aware of the shortfall in services to which GPs could refer for psychological therapies. We hypothesised that this may act, independently of knowledge, as a deterrent to making an appropriate referral. This was confirmed by an overwhelming majority of GPs who felt that waiting times hindered their clinical practice.

Our hypotheses in relation to the ability to recognise and manage PTSD were largely borne out. There was a trend of more best practice among GPs in Lothian where a specialist PTSD service exists and GPs were therefore more likely to gain knowledge of PTSD. There was also a trend suggesting better recognition and management among more recent university graduates who were more likely to have been taught about PTSD. Although the numbers achieving best practice were too small for these trends to show significance, both of these findings lend support to the case for a knowledge gap.

That general psychiatrists achieved a greater rate of recognition than GPs was expected, yet a surprising number (11%) failed to recognise PTSD, misdiagnosed acute stress reaction as PTSD (16%), or did not prescribe an appropriate drug (46%). It appears that some gaps in knowledge of PTSD also exist in secondary care, although our sample was small. The implications of this for primary care are that diffusion of appropriate knowledge regarding the recognition and management of PTSD may not always occur.

Strengths and limitations of the study

We constructed and validated an instrument and used it with a large sample within a study design appropriate for investigating this area of clinical importance. We chose our method of data collection to reflect clinical practice as far as was possible, through eliciting rapid responses to a clinical scenario without any additional prompts as to the area of interest. Purely qualitative methods would not have been suitable for assessing knowledge blind in this way, while a quantitative survey of PTSD prevalence and diagnosis rates in primary care would only repeat previous studies, not explore the reasons for low rates of diagnosis.

A limitation of this study is the risk of non-responder bias, with a completion rate of 48%. According to sex and region the responders are representative of the original sample. The information gathered on reasons for non-completion suggested that many GPs were simply too busy to respond. However, it is possible that given the apparent lack of knowledge in this area among many responders, the non-responders failed to respond in part because of lack of knowledge, and that our responders may reflect a bias of those with greater knowledge. Conversely, it is arguable that responses to a postal questionnaire under the current time-pressured conditions of general practice could lead to a poorer reflection of knowledge than the reality.

Implications for clinical practice and future research

PTSD is often not a straightforward diagnosis to make. The recognition of PTSD in actual clinical practice in primary care presents a greater challenge than recognition from our case vignette. High rates of comorbidity with psychiatric disorder and physical illness result in varying and misleading presentations.[1-5,12] Often the patient will not offer, or even recognise, a link with a traumatic event. These factors, combined with time-pressured interviews, conspire against

the recognition of PTSD by GPs, which is reflected in an increasing body of literature.[12,13,16-18] Furthermore, the constraint of inadequate psychological services for referral when appropriate, reflected in our results, also seriously hinders best practice in primary care.

Our results are perhaps not surprising and are certainly understandable. Great efforts have been made to improve the recognition and treatment of depression in primary care and, in contrast, PTSD has only relatively recently gained a more prominent profile.[21] We do not seek to suggest that GPs should be experts in PTSD, yet we would question whether 28% of GPs having the knowledge to recognise and prescribe an efficacious drug treatment for a relatively prevalent disorder is acceptable. The high rate of referral to secondary care (87%), however, does suggest a willingness to seek specialist advice. In this context the fact that our small sample of psychiatrists also shows gaps in knowledge is a serious concern. Our results as a whole add to the existing literature by describing a knowledge gap as one of the reasons for poor recognition and management of PTSD in primary care.

Recent attempts to improve the clinical practice of GPs in areas of mental health have met with limited success.[22-24] These studies have either not provided an educational intervention,[22] only provided an educational intervention,[24] or have not described a knowledge deficit.[23] In general, interventions using interactive workshops or an educational outreach model have been shown to be effective.[25] In light of the knowledge gap we have shown, we would argue that the active implementation of evidence-based clinical guidelines for PTSD using an educational outreach model could result in improved recognition and management of PTSD in primary and secondary care. Availability and access to psychological services also needs to be improved.

Further research should explore barriers to the implementation of PTSD guidelines, using this to inform the planning of an effective multifaceted implementation strategy. Such an implementation strategy for PTSD guidelines has the potential to deliver improvements in clinical practice and outcome for sufferers of PTSD.

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Supplementary information

Additional information accompanies this paper at:
http://www.rcgp.org.uk/journal/index.asp

Acknowledgements

We would like to thank Dr Alan Munro for critical revision of the questionnaire design and the final paper, and Jill Mollison for statistical advice. This work was supported by a research fellowship granted to Dr Calum Munro from the Scottish Intercollegiate Guidelines Network (SIGN) and the Scottish Council for Postgraduate Medical Education (SCPME).